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| 65858 7590 01/06/2010 NOVAK DRUCE AND QUIGG LLP (Volvo) 1000 LOUISIANA STREET FIFTY-THIRD FLOOR HOUSTON, TX 77002 | | | | |
| EXAMINER | | | | |
| MAZUMDAR, SONYA | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/711,645

Applicant(s)

KARLSSON ET AL.

Examiner

SONYA MAZUMDAR

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27, 29, 31-36, 39-45 and 47-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31 and 32 is/are allowed.
- 6) ☒ Claim(s) 27, 29, 33-36, 39-45, 47-54 and 56-60 is/are rejected.
- 7) ☒ Claim(s) 36 and 55 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 2-4, filed December 11, 2009, with respect to the rejections of claims 27, 29, 31-35, 39-45, 47-54, and 56-60 under 35 USC 103(a), have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new grounds of rejection is made in view of Simila (US 2003/0183332).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 33, 51, 56, 57, 58, and 59 are rejected under 35 U.S.C. 102(e) as being unpatentable by Simila.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Simila teaches a method for manufacturing a composite layer structure from a first and second cover sheet (102, 104) between which a core sheet is provided which

comprises fibers and adhesive, wherein the cover sheets and the fibers are made of metallic and alloy materials, said method comprising the following steps:

- applying a mixture of fibers and adhesive onto at least one of the at least one first and the at least one second cover sheets whereby locally varying physical properties of the composite layer structure are achieved by locally applying the mixture only onto predetermined areas of the at least one first and the at least one second cover sheet in the form of a pattern comprising channels (124), allowing for the passage of air, which remain free of the mixture of fibers and adhesive, such that inherent stresses due to different thermal expansion coefficients of the cover sheets (102, 104) are at least substantially avoided (paragraphs 0047, 0049, and 0070);
- joining the cover sheets together.

With respect to claims 36 and 59, Simila teaches applying a non-continuous layer of the mixture of fibers (9) and adhesive (5) is applied in various shaped patterns such as dots and circles (Figures 13 and 14).

With respect to claim 51, Simila teaches applying the mixture of fibers and adhesive by screen printing (paragraphs 0002, 0006, and 0080).

With respect to claim 56, Simila teaches curing to comprise several steps, depending on the type of adhesive(s) used (paragraphs 0063 and 0079).

With respect to claim 59, Simila teaches providing an adhesive that may be reactive adhesives, two-component adhesives, or thermoplastics (paragraphs 0043-0045, 0049).

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 27, 29, 39, 43, 47, 49, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lefeber et al. (US 5,185,198) in view of Gregorian et al. (US 4,035,532)

With respect to claims 27, 29, 39, 47, 49, and 53, Lefeber et al. teach a method for manufacturing a composite layer structure from a first and second cover sheet between which a core sheet is provided which comprises fibers and thermoplastic adhesive, wherein the cover sheets are made of metallic and alloy materials (column 3, lines 10-26), said method comprising the following steps:

- applying fibers and adhesive onto one or both cover sheets whereby locally varying physical properties of the composite layer structure are achieved by locally applying the fibers and adhesive;
- joining the cover sheets together.

Lefeber et al. teach that the adhesive layer can comprise all kinds of layers known in the prior art both thermosetting and thermoplastic resin material which can incorporate all kind of fibers. It is also possible to subject the laminate to a post-stressing treatment after which the internal stress distribution is favorable for fatigue and compression (column 6, lines 3-9). By using metal sheets of different alloys and tempers, or different adhesive/fiber layers (fiber type and resin type), or different fiber orientations, or by applying more or less layers, it would have been obvious that a wide

range of hybrid laminates with different characteristics could be obtained (column 1, lines 30-35).

However, Lefeber et al. do not specifically teach applying the adhesive, then applying the fibers onto areas coated with the adhesive of at least one of the cover sheets. Gregorian et al. teach using a foamed adhesive at a desired viscosity to adhere flock onto a substrate and creating channels within (column 2, lines 3-9; column 4, lines 10-22; Figure 2). It would have been obvious to use a foamed adhesive as Gregorian et al. taught to allow guidance of liquid and gaseous media within, as well as impart flexibility before further shaping (Lefeber: column 3, lines 43-52).

With respect to claim 43, Lefeber et al. teach a hardening process for a composite layer structure to comprise several steps, depending on the type of adhesive(s) used (abstract; column 5, line 62 – column 6, line 12).

6. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lefeber et al. in view of Gregorian et al. as applied to claim 27 above, and further in view of Simila.

The teachings of claim 27 are as described.

Although not specifically taught by Lefeber et al. in view of Gregorian et al., it would have been obvious for one having ordinary skill in the art, as Simila teaches, to apply the mixture of fibers and adhesive by screen printing, as one of various conventional methods to create an adhesive pattern (paragraphs 0002, 0006, and 0080).

7. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simila as applied to claim 33 above, and further in view of Sobolev (US 5,030,488).

The teachings of claim 33 are as described above.

Simila does not teach depositing a mixture of adhesive and fibers by spraying; however, it would have been obvious to one having ordinary skill in the art, as Sobolev teaches a method for producing laminates comprising two metal sheets with fibrous core made of metallic fibers, and before the two sheets are joined together, one cover sheet is applied in certain areas with a mixture of adhesive and fibers by a reciprocating spray nozzle (abstract; column 8, lines 17-36; column 11, lines 38-61; Figures 1A and 1B).

8. Claims 40 and 52 rejected under 35 U.S.C. 103(a) as being unpatentable over Lefeber et al. in view of Gregorian et al. as applied to claim 27 above, and further in view of Sobolev.

The teachings of claim 27 are as described above.

With respect to claim 40, Sobolev also teaches applying a mixture of metallic and non-metallic fibers, as the selection of appropriate fibers for the desired properties for the laminate and for compatibility with the adhesive being used will be apparent to one skilled in the art (Sobolev: column 11, lines 41-44 and lines 59-62).

With respect to claim 52, Lefeber et al. in view of Gregorian et al. do not teach depositing a mixture of adhesive and fibers by spraying; however, it would have been obvious to one having ordinary skill in the art, as Sobolev teaches a method for producing laminates comprising two metal sheets with fibrous core made of metallic

fibers, and before the two sheets are joined together, one cover sheet is applied in certain areas with a mixture of adhesive and fibers by a reciprocating spray nozzle (abstract; column 8, lines 17-36; column 11, lines 38-61; Figures 1A and 1B).

9. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lefeber et al. in view of Gregorian et al., as applied to claim 27 above, and further in view of Kirkpatrick et al. (US 3,706,614)

The teachings of claim 27 are as described above.

Lefeber et al. in view of Gregorian et al. do not teach applying fibers in a positive/negative pattern. However, it would have been obvious to one having ordinary skill in the art to do so, as Kirkpatrick et al. teach creating an electric field, and polarize fibers (50) and fix them into predetermined positions to create patterns (column 8, line 58 – column 9, line 25).

10. Claims 42, 44, 45, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lefeber et al. in view of Gregorian et al. as applied to claim 27 above, and further in view of Coran et al. (US 3,767,505)

The teachings of claim 27 are as described above.

With respect to claims 42, 44 and 45, Lefeber et al. in view of Gregorian et al. do not specifically teach applying fibers to a cover sheet by transfer. However, it would have been obvious to do so, as Coran et al. teach depositing fibers (33), in a disoriented manner, on a carrier (14) and putting the carrier onto a cover sheet (11) with adhesive, thereby adhering the fibers to the respective cover sheet, and removing the carrier thereafter, since other methods are less likely to provide composites with uniform

spacing between fibers in a predetermined pattern (column 1, lines 12-24 and 49-55; Figures 3 and 4b).

With respect to claim 50, Lefeber et al. in view of Gregorian et al. and Coran et al. teach magnetically aligning fibers on a carrier (Coran: column 3, lines 15-34; claim 8; Figure 3).

11. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simila as applied to claim 33 above, and further in view of Sobolev.

The teachings of claim 33 are as described above.

Simila teaches providing an adhesive filled with a thermally and/or electrically conducting material such as graphite or carbon fibers, but does not specifically teach applying metallic fibers as well (paragraph 0047). However, one having ordinary skill in the art would have been motivated to do so, as Sobolev teaches applying a mixture of metallic and non-metallic fibers, where the selection of appropriate fibers for the desired properties for the laminate and for compatibility with the adhesive being used will be apparent to one skilled in the art (Sobolev: column 11, lines 41-44 and lines 59-62).

12. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simila as applied to claim 33 above, and further in view of Coran et al.

The teachings of claim 33 are as described above.

Simila does not specifically teach applying fibers to a cover sheet by transfer. However, it would have been obvious to do so, as Coran et al. teach depositing fibers (33), in a disoriented manner, on a carrier (14) and magnetically aligning fibers on a carrier before laminating the carrier onto a cover sheet (11) with adhesive, thereby

adhering the fibers to the respective cover sheet, to provide fibers with uniform, spatial orientation in a predetermined pattern after deposition (column 1, lines 12-24 and 49-55; column 3, lines 15-34; claim 8; Figures 3 and 4b).

Allowable Subject Matter

13. Claims 31 and 32 are allowed.

The prior art does not teach a method for manufacturing a composite layer structure from cover sheets and a fibrous core sheet are made of steel, aluminium or any other metallic materials, or mixtures comprising these materials, where fibers are fixed onto at least one of the cover sheets by inductive stitch welding.

14. Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not teach a method for manufacturing a composite layer structure, where cover sheets and fibers of a core sheet, between the cover sheets, are made of steel, aluminium or any other metallic materials, or mixtures comprising these materials, and the core sheet is produced by applying a mixture of adhesive and fibers as foaming dots onto at least one of the cover sheets.

15. Claim 55 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not teach a method for manufacturing a composite layer structure, where cover sheets and fibers of a core sheet, between the cover sheets, are

made of steel, aluminium or any other metallic materials, or mixtures comprising these materials, and the core sheet is produced by applying a mixture of adhesive and fibers in a positive/negative pattern.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SONYA MAZUMDAR whose telephone number is (571)272-6019. The examiner can normally be reached on 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SM

/Philip C Tucker/
Supervisory Patent Examiner, Art Unit 1791